



TENNESSEE DEPARTMENT OF

EDUCATION

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Principles of Fire and Emergency Services

Primary Career Cluster:	Law, Public Safety, Corrections and Security
Consultant:	Amy F. Howell, (615) 532-2839, Amy.F.Howell@tn.gov
Course Code(s):	6154
Prerequisite(s):	None
Credit:	1
Grade Level:	9
Graduation Requirements:	This course satisfies one of three credits required for an elective focus when taken in conjunction with other Law and Public Safety courses.
Programs of Study and Sequence:	This is the first course in the <i>Fire Management Services</i> program of study.
Aligned Student Organization(s):	SkillsUSA: http://www.tnskillsusa.com/ Brandon Hudson, (615) 532-2804, Brandon.Hudson@tn.gov
Coordinating Work-Based Learning:	Teachers are encouraged to use embedded WBL activities such as informational interviewing, job shadowing, and career mentoring. For information, visit http://tn.gov/education/cte/work_based_learning.shtml .
Available Student Industry Certifications:	This course meets the state requirements for minimum training of firefighters.
Dual Credit or Dual Enrollment Opportunities:	There are no known dual credit/dual enrollment opportunities for this course. If interested in developing, reach out to a local postsecondary institution to establish an articulation agreement.
Teacher Endorsement(s):	751
Required Teacher Certifications/Training:	Tennessee Fire Commission Fire Fighter Instructor 1
Teacher Resources:	http://www.tn.gov/education/cte/LawPublicSafetyCorrectionsSecurity.shtml

Course Description

Principles of Fire and Emergency Services is the introductory course in the *Fire Management Services* program of study. Students will be introduced to the challenging work of emergency responders in fire management services by learning regulations, health and safety protocol, communications, and operations. Upon completion of this course, if the teacher is a member of the local volunteer fire department, proficient students who are at least 16 years of age will have met the state requirements

(T.C.A. 4-24-112) for minimum training of firefighters. Standards in this course are aligned with Tennessee State Standards for English Language Arts & Literacy in Technical Subjects.*

Program of Study Application

This is the first course in the *Fire Management Services* program of study. For more information on the benefits and requirements of implementing this program in full, please visit the Law, Public Safety, Corrections and Security website at

<http://www.tn.gov/education/cte/LawPublicSafetyCorrectionsSecurity.shtml>.

Course Standards

Career Overview (Firefighter Orientation)

- 1) Articulate important historical events and milestones impacting the evolution of the current fire and emergency services systems in the United States. Discuss the growth of volunteer services and advances in equipment that have aided in the evolution. Use a timeline or other graphic to illustrate the major developments, citing specific textual evidence from research. (TN Reading 1, 2, 7; TN Writing 2, 9)
- 2) Prepare a paper or electronic career profile for at least one occupation in the fire services, emergency medical services, and public safety fields, to be added as part of a Law and Public Safety or Health Science portfolio. Draw on print and online sources and/or interviews with health care professionals to capture at minimum the following:
 - a. Job description
 - b. Roles and responsibilities
 - c. Essential knowledge and skills needed for the career
 - d. Program or path of study to reach occupational goals, beginning with high school and proceeding through postsecondary
 - e. Required personality traits for the career
 - f. Licensure and credentialing requirements
 - g. Non-educational job requirements such as physical fitness tests, minimum age, and psychological evaluations
 - h. Required professional attributes (such as teamwork, time management, and leadership)
 - i. National Fire Protection Association (NFPA) 1500 standards for training and National Highway Traffic Safety Administration (NHTSA) training standards(TN Reading 1, 2; TN Writing 6, 9)
- 3) Develop a reference toolkit of physical, mental, and personal requirements for personnel in fire, emergency, and public safety services. Document what the “profile of proficiency” looks like for professionals in these fields—for example, what scores are needed on a physical, mental, or emotional fitness test, and what guidelines must be followed for personal disease/disorder control.

Foundations of Fire, Emergency Services, and Public Safety (Firefighter Orientation)

- 4) Identify the types, functions, and defining features of fire services and emergency medical service systems in the United States. Compare and contrast systems in urban, suburban, and

rural communities. Include the types of personnel one would find in each locale, the mission upheld by each, and any differences in culture. Create a report and/or presentation on these comparisons. (TN Reading 2, 9; TN Writing 8, 9)

- 5) Research the types and functions of all apparatuses and vehicles used in fire and emergencies services. Develop a graphic illustration of each depicting all equipment and tools found with each type of vehicle.
- 6) Generate an informational brochure to share with elementary students the scope, purpose, and organizational structure of fire and emergency services. Distinguish among public, private, and volunteer services. (TN Reading 1, 5; TN Writing 4, 9)

Regulation (Firefighter Orientation)

- 7) When emergencies occur, fire, emergency medical services (EMS), and public safety personnel are required to follow standard operating procedures (SOPs) and/or “authorization to practice” guidelines. Define the terms SOP and authorization to practice, explain the various types of SOP, and relate why an SOP should follow the priorities of life safety, incident stabilization, and property conservation intention. Develop an SOP for a fire department, an EMS department, and a public safety situation. (TN Reading 1, 2, 6, 8; TN Writing 4, 9)
- 8) Summarize the importance, purposes, components, and elements of an incident command system (ICS). Include subdivisions within the ICS structure and explain the firefighter’s role in a local incident command system. Capture those findings in a written, oral, or digital presentation, citing evidence from the investigation. (TN Reading 1, 2; TN Writing 6, 7)
- 9) Examine the concepts and principles of the National Incident Management System (NIMS) that describe how emergencies are managed, from preparedness to recovery in a large region or when multiples agencies are involved. Successfully complete Federal Emergency Management Agency (FEMA) NIMS ICS-100 and NIMS ICS-700 training courses through the Emergency Management Institute. (TN Reading 3)
- 10) During an emergency situation both private and public organizations and agencies can be involved. Identify these organizations or agencies; describe their functions, the kinds of careers available within each, the scope of their services, and jurisdiction issues that could arise.

Health and Safety (Firefighter Safety and Health)

- 11) Investigate National Fire Protection Association 1500 and National Highway Traffic Safety Administration EMS standards related to the health and safety of firefighter and EMS staff. Compare and contrast the regulations of each, including but not limited to regulations regarding the following: training and education of firefighters and EMS personnel; scene safety; electrical safety; standard operating procedures related to safety; and facility safety pertaining to fire and ambulance services. Capture the information in a written, oral, graphic, or digital presentation, citing evidence from the investigation. (TN Reading 1; TN Writing 6, 7)
- 12) Summarize the dangers associated with careers in fire, emergency response services, and public service; support analysis with examples from actual cases reported in print and digital media.

Provide examples of tactics an individual could employ to prevent or mitigate risks, including injury prevention strategies such as emergency escape procedures. (TN Reading 2; TN Writing 2, 9)

- 13) Investigate critical incidence stress management procedures for professionals in the fire, emergency response, and public service sectors. Identify stressors and stress-inducing situations through interviews with professionals in the field. Collaborate with a team to identify techniques and strategies for managing and alleviating stress. Communicate recommendations in the form of a toolkit, brochure, or fact sheet to support the use of these strategies, citing evidence drawn from the investigation. (TN Reading 1, 2; TN Writing 4, 6)

Protective Clothing, Protective Equipment, and OSHA Standards (Firefighter Safety and Health)

- 14) Explain the terms personal protective clothing (turnout gear) and personal protective equipment (PPE). Describe the following for each item and demonstrate use:
- Purpose
 - Characteristics
 - Guidelines for care
 - Limitations of each
 - Conditions that warrant utilizing each
- 15) Respiratory protection is very important in firefighting careers. Describe in detail the characteristics of effective air management. Distinguish between characteristics of toxic and non-toxic respiratory hazards, identifying physical, medical, and mental factors that affect the firefighter's ability to use respiratory protection effectively. Discuss the limitations of devices and techniques, safety precautions commonly employed by firefighters, and signs and symptoms of oxygen deficiency. (TN Reading 1; TN Writing 9)
- 16) Compare and contrast the two types of self-contained breathing apparatus (SCBA) used in fire services. Identify the key functions and characteristics of the Personal Alert Safety System (PASS) or Personal Alert Device (PAD) systems and explain why they are required by NFPA 1500 standards. Understand concepts of and perform skills related to SCBA, such as:
- Don SCBA: Over the head method
 - Don SCBA: Coat Method
 - Don SCBA: Seat-Mount Method
 - Doff SCBA
 - Inspect SCBA
 - Clean SCBA
 - Fill SCBA cylinder from cascade system
 - Controlled Breathing Techniques
 - Exit a constricted opening wearing standard SCBA
 - Change an SCBA-one person method
 - Change an SCBA-two person method
- 17) Interpret OSHA standards followed in fire, emergency, and public service careers. Explain the procedure when an encounter with hazardous waste occurs and what emergency response should be deployed. Cover the following areas in the interpretation and explanation:
- Blood-borne pathogen protection

- b. Eye and face protection
 - c. Respiratory protection
 - d. Head protection
 - e. Foot protection
 - f. Electrical protection
 - g. Hand protection
 - h. Fire brigades
 - i. Don and doff personal protective clothing and personal protective equipment
- (TN Reading 1, 4)

Emergency Department Communication (Fire Department Communications)

- 18) Research and explain the protocols for handling an emergency call by fire services, emergency services, and public service personnel. Outline the procedure in an informational brochure or public service announcement for community persons. Include basic communication and telecommunication information, types of public alerting systems, and how personnel are notified of an emergency. (TN Reading 1; TN Writing 4, 9)
- 19) Compare and contrast the various forms of communications within fire services, emergency services, and public safety services or law enforcement at an emergency scene. Explore similarities and differences in radio communications, communication responsibilities of the firefighter, EMT, or police officer at the scene, arrival and progress reports, use of tactile channels, and evacuation signals and personnel accountability reports. Make a claim about the appropriate communication to use in a given situation and strengthen argument with counterclaim(s) and justification. (TN Reading 1, 4; TN Writing 1, 9)
- 20) Evaluate factors that contribute to effective communication and interview skills with patients/victims/bystanders in an emergency situation, demonstrating sensitivity to cultural differences and other potential barriers to communication. Apply effective communication and interviewing skills within a practicum setting. (TN Reading 2)
- 21) Understand the principles of and practice skills related to the following emergency communication processes:
- a. Handle business calls and reports of emergency
 - b. Use a portable radio for routine traffic
 - c. Use a portable radio for emergency traffic (i.e., call a mayday)
 - d. Create an incident report
- (TN Reading 3)

Emergency Operations (Firefighter Safety and Health)

- 22) Interpret scene management and safety standards and/or protocols by writing a scenario for each of the following situations: a) traffic or highway incidents, b) violent encounters, c) crowds, d) nature of illness or mechanisms of injury, e) number of patients and/or victims, and f) personnel accountability. Identify which control zones and additional resources would be involved. (TN Reading 1; TN Writing 2, 9)

- 23) Analyze traffic laws, regulations for riding in emergency vehicles, wearing seatbelts in emergency vehicles, and driver operation standards. (TN Reading 2)
- 24) During emergency situations, personnel accountability is important. Discuss in a written, oral, or digital format the principles associated with the following: Passport System, SCBA Tag System, interior operations, emergency escape, and rapid intervention. (TN Reading 1; TN Writing 2, 9)
- 25) Understand the principles of and practice skills related to the following emergency operations:
- a. Scene Size-up with motivation of other agencies
 - b. Mounting and dismounting a fire truck or ambulance
 - c. Setting up a safe work area using traffic and scene control devices
- (TN Reading 3)
- 26) Successfully perform American Red Cross or American Heart Association Adult, Child, and Infant Basic Life Support for Healthcare Providers and first aid skills. (TN Reading 3)

Fire Behavior

- 27) Analyze the concepts surrounding the science of a fire, including areas such as:
- a. Physical and chemical properties and changes
 - b. Modes of combustion
 - c. Classification of fires
 - d. Fire triangle and tetrahedron
 - e. Heat and transmission of heat
 - f. Fuel
 - g. Oxygen
 - h. Products of combustion
- Document findings in a verbal, written, or graphic format linking information in a cohesive manner. (TN Reading 1; TN Writing 2, 9)
- 28) Explain the portable fire extinguisher rating system, then identify the types of portable fire extinguishers and the extinguishing agent characteristics. (TN Reading 4)
- 29) Understand the concepts of and perform skills related to selecting and using portable fire extinguishers:
- a. Given a type of fire, select the proper type of portable fire extinguisher
 - b. Operate a portable fire extinguisher using the PASS method of application
 - c. Operate a stored pressure water extinguisher
 - d. Operate a dry chemical (A B C) extinguisher
 - e. Operate a carbon dioxide extinguisher
 - f. Inspect a portable fire extinguisher

Standards Alignment Notes

*References to other standards include:

- TN Reading: [State Standards for English Language Arts & Literacy in History/Social Studies, Science, and Technical Subjects](#); Reading Standards for Literacy in Science and Technical Subjects 6-12; Grades 9-10 Students (page 62).
 - Note: While not directly aligned to one specific standard, students who are engaging in activities outlined above should be able to also demonstrate fluency in Standard 10 at the conclusion of the course.
- TN Writing: [State Standards for English Language Arts & Literacy in History/Social Studies, Science, and Technical Subjects](#); Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects 6-12; Grades 9-10 Students (pages 64-66).
 - Note: While not directly aligned to one specific standard, students who are engaging in activities outlined above should be able to also demonstrate fluency in Standards 3, 5, and 10 at the conclusion of the course.
- P21: Partnership for 21st Century Skills [Framework for 21st Century Learning](#)
 - Note: While not all standards are specifically aligned, teachers will find the framework helpful for setting expectations for student behavior in their classroom and practicing specific career readiness skills.